US009483658B2

(12) **United States Patent**
Loader

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(54) **DISPLAY DEVICE**

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(73) Assignee: **BARCLAYS BANK PLC**, London (GB)

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(51) **Int. Cl.**

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G06F 21/62	(2013.01)
G06F 9/44	(2006.01)
G06F 21/60	(2013.01)
G06F 3/0488	(2013.01)
G06F 3/041	(2006.01)
G06F 3/0482	(2013.01)
G06F 3/0484	(2013.01)

(52) **U.S. Cl.**
CPC ***G06F 21/6245*** (2013.01); ***G06F 3/041*** (2013.01); ***G06F 3/0482*** (2013.01); ***G06F 3/0488*** (2013.01); ***G06F 3/04842*** (2013.01); ***G06F 3/04886*** (2013.01); ***G06F 9/4443*** (2013.01); ***G06F 21/60*** (2013.01)

(58) **Field of Classification Search**
USPC 726/27
See application file for complete search history.

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* cited by examiner

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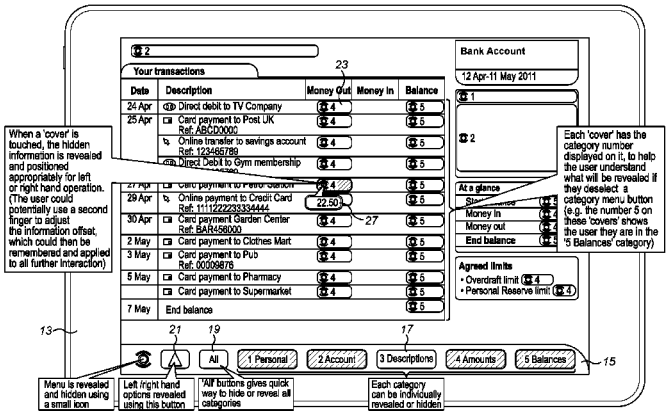
(57) **ABSTRACT**

A method of operating a display device, such as a tablet device, comprises displaying a plurality of covers corresponding to respective different data items, such as financial information, and selecting at least one cover and displaying the corresponding data item or data items.

16 Claims, 19 Drawing Sheets



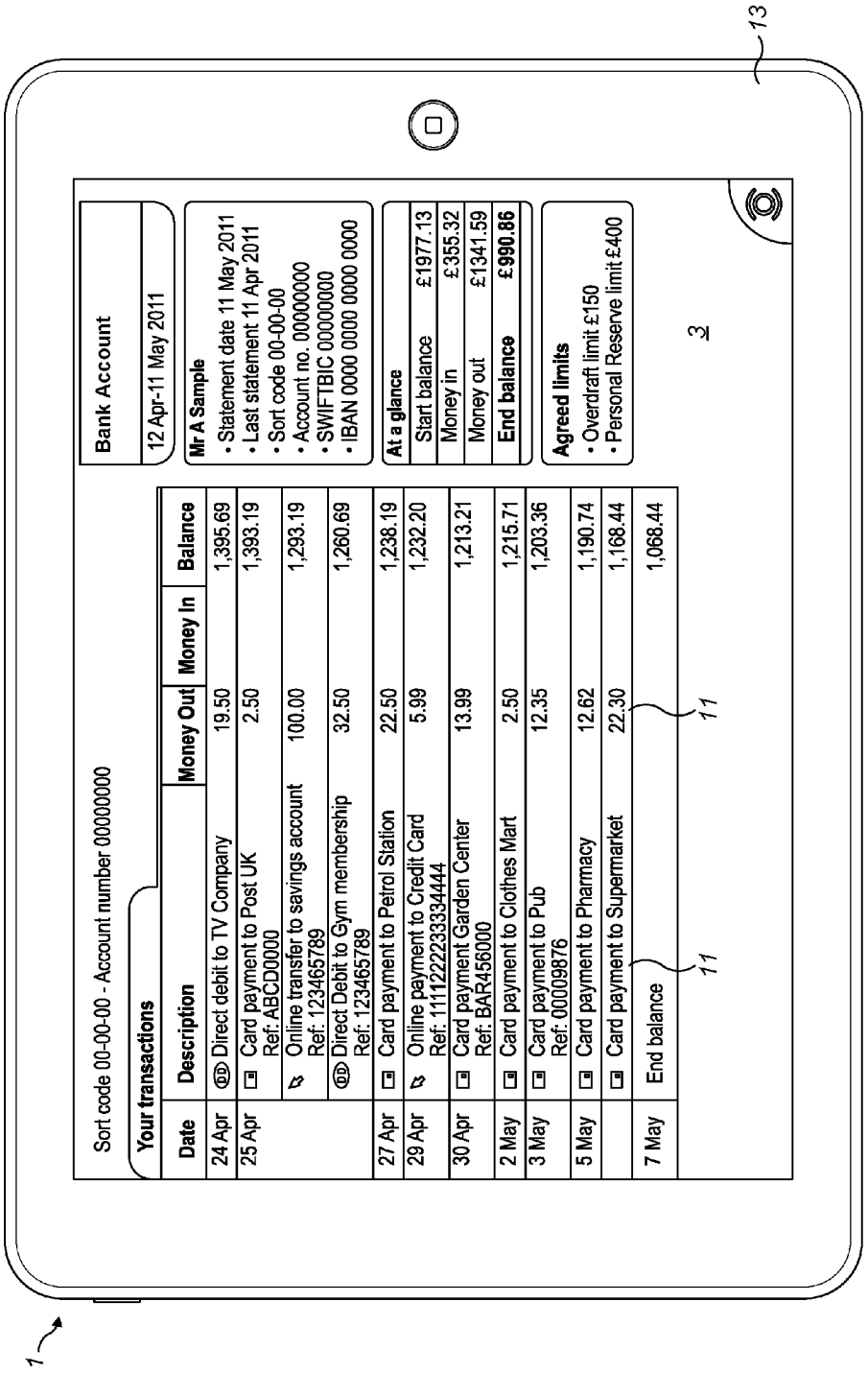

1
13
Sort code 00-00-00 - Account number 00000000
Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
19.50
1,395.69
25 Apr
Card payment to Post UK Ref: ABCD0000
2.50
1,393.19
Online transfer to savings account Ref: 123465789
100.00
1,293.19
Direct Debit to Gym membership Ref: 123465789
32.50
1,260.69
27 Apr
Card payment to Petrol Station
22.50
1,238.19
29 Apr
Online payment to Credit Card Ref: 1111222233334444
5.99
1,232.20
30 Apr
Card payment Garden Center Ref: BAR456000
13.99
1,213.21
2 May
Card payment to Clothes Mart
2.50
1,215.71
3 May
Card payment to Pub Ref: 00009876
12.35
1,203.36
5 May
Card payment to Pharmacy
12.62
1,190.74
Card payment to Supermarket
22.30
1,168.44
7 May
End balance
1,068.44
11
11
3
Mr A Sample
• Statement date 11 May 2011
• Last statement 11 Apr 2011
• Sort code 00-00-00
• Account no. 00000000
• SWIFTBIC 00000000
• IBAN 0000 0000 0000 0000
At a glance
Start balance £1977.13
Money in £355.32
Money out £1341.59
End balance £990.86
Agreed limits
• Overdraft limit £150
• Personal Reserve limit £400

FIG. 1

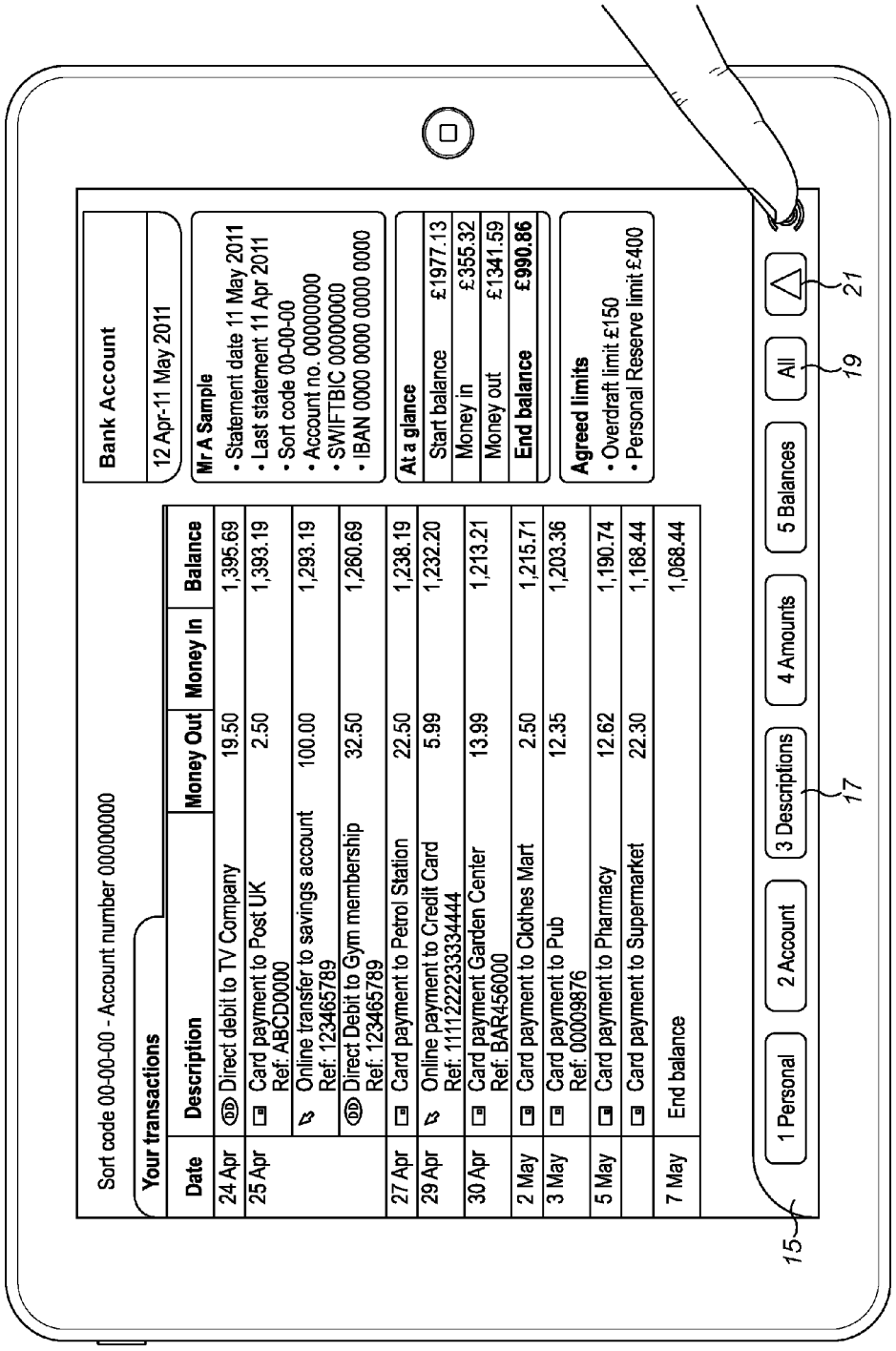

Sort code 00-00-00 - Account number 00000000
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
19.50
1,395.69
25 Apr
Card payment to Post UK Ref: ABCD0000
2.50
1,393.19
Online transfer to savings account Ref: 123465789
100.00
1,293.19
Direct Debit to Gym membership Ref: 123465789
32.50
1,260.69
27 Apr
Card payment to Petrol Station
22.50
1,238.19
29 Apr
Online payment to Credit Card Ref: 1111222233334444
5.99
1,232.20
30 Apr
Card payment Garden Center Ref: BAR456000
13.99
1,213.21
2 May
Card payment to Clothes Mart
2.50
1,215.71
3 May
Card payment to Pub Ref: 00009876
12.35
1,203.36
5 May
Card payment to Pharmacy
12.62
1,190.74
Card payment to Supermarket
22.30
1,168.44
7 May
End balance
1,068.44
Bank Account
12 Apr-11 May 2011
Mr A Sample
• Statement date 11 May 2011
• Last statement 11 Apr 2011
• Sort code 00-00-00
• Account no. 00000000
• SWIFTBIC 00000000
• IBAN 0000 0000 0000 0000
At a glance
Start balance £1977.13
Money in £355.32
Money out £1341.59
End balance £990.86
Agreed limits
• Overdraft limit £150
• Personal Reserve limit £400
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All
15
17
19
21

FIG. 2

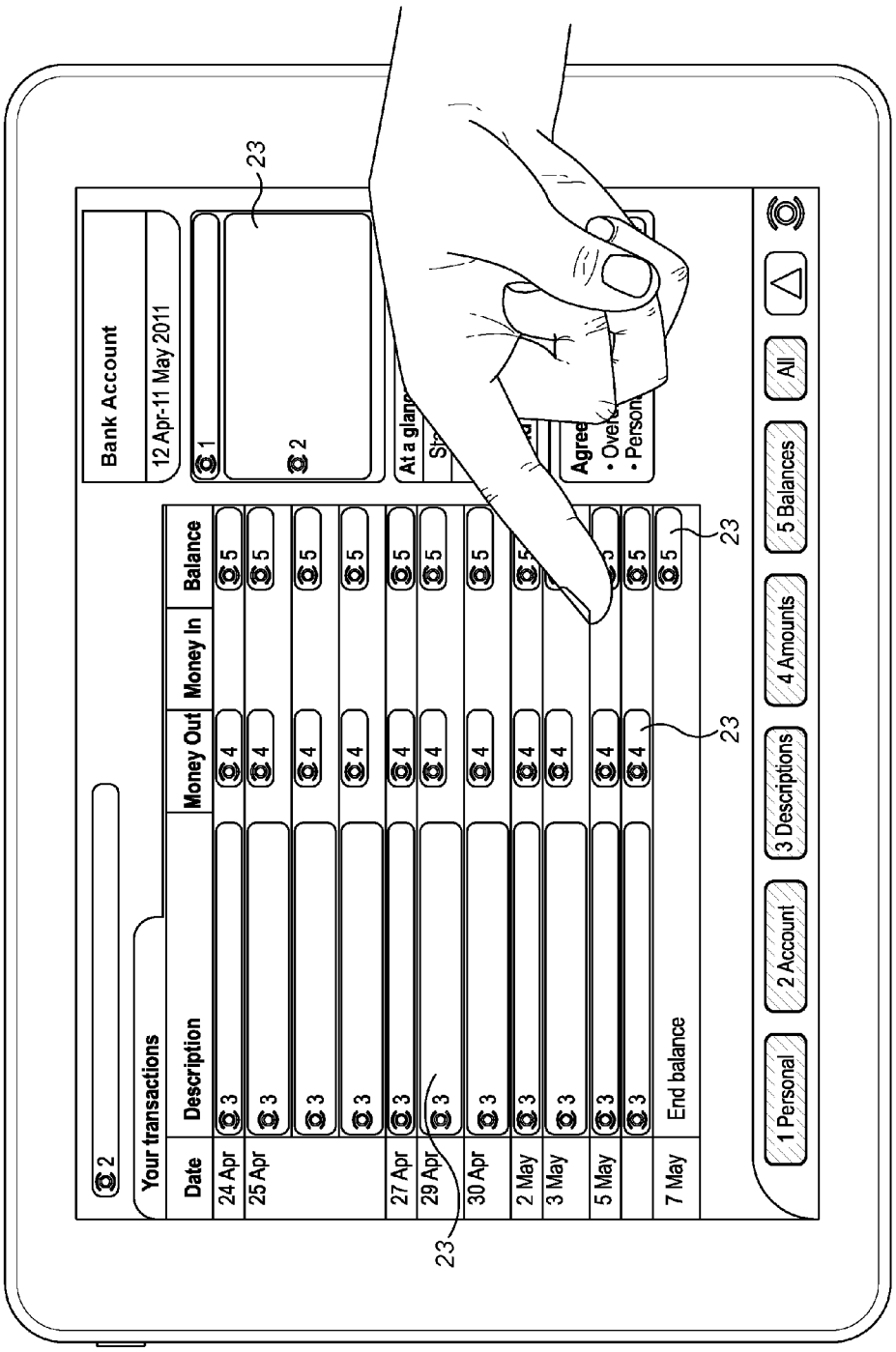

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All
23

FIG. 3

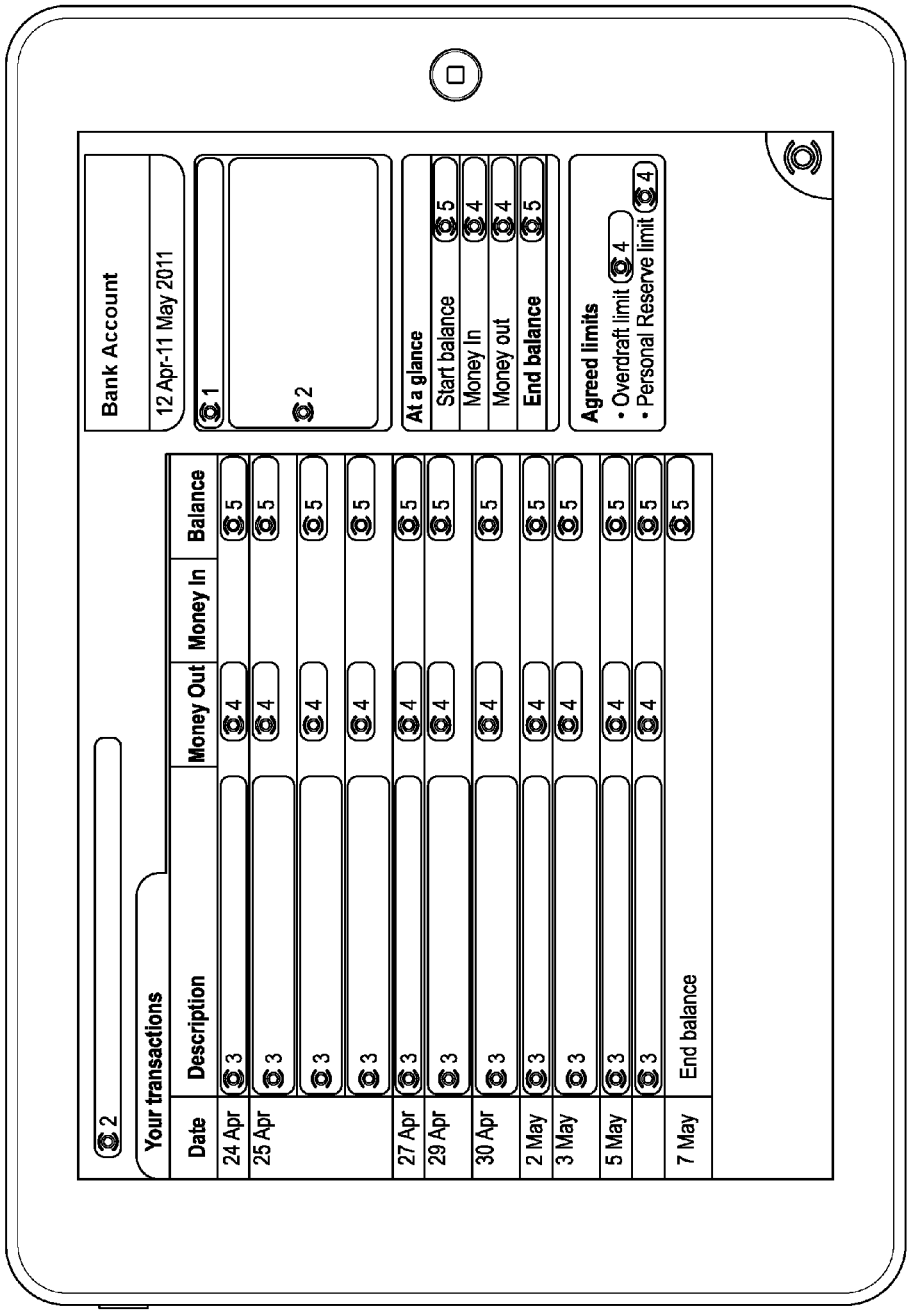

Bank Account
12 Apr-11 May 2011
1
2
At a glance
Start balance 5
Money In 4
Money out 4
End balance 5
Agreed limits
• Overdraft limit 4
• Personal Reserve limit 4
2
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr 3 4 5
25 Apr 3 4 5
3 4 5
3 4 5
27 Apr 3 4 5
29 Apr 3 4 5
30 Apr 3 4 5
2 May 3 4 5
3 May 3 4 5
5 May 3 4 5
3 4 5
7 May End balance 5

FIG. 4

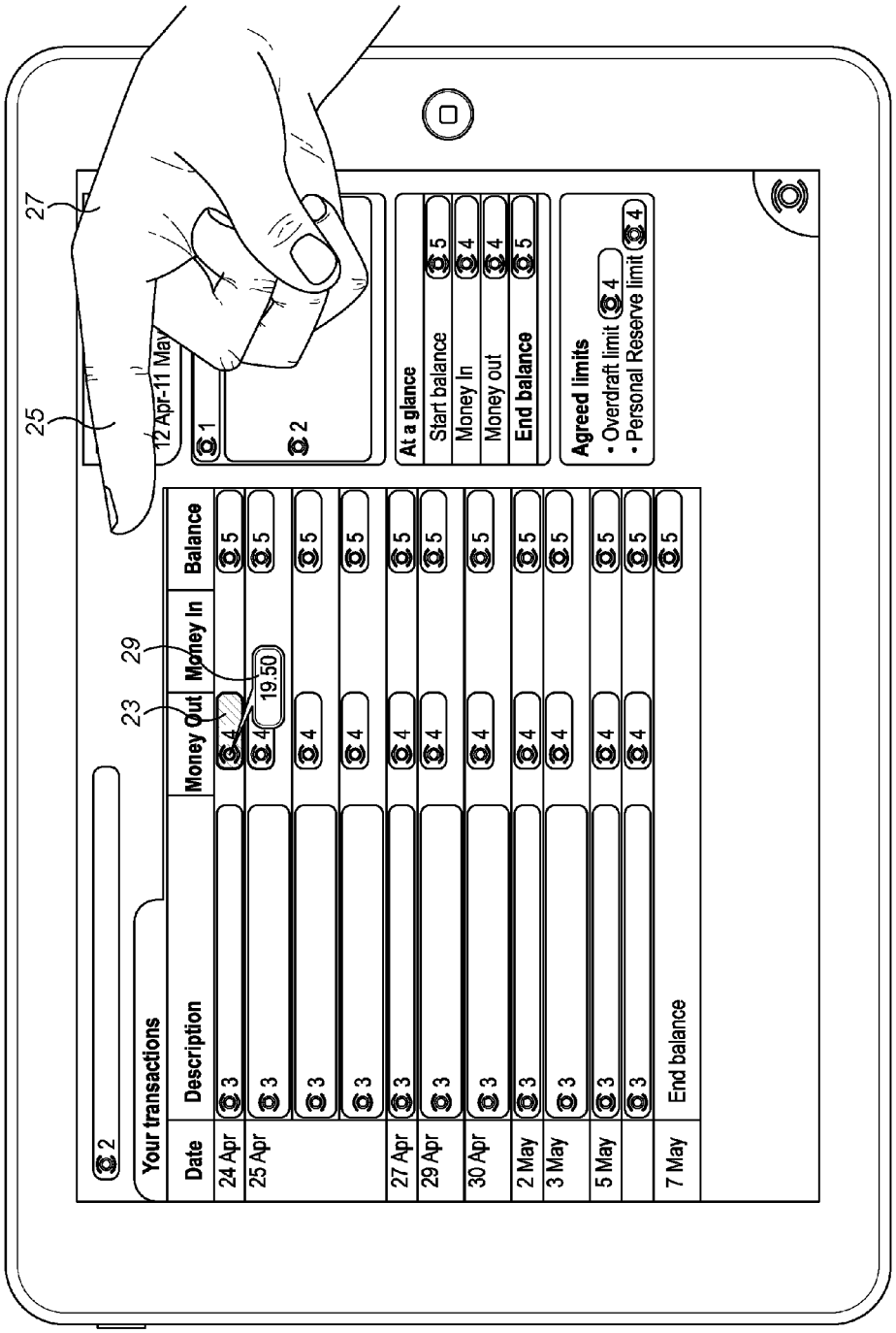

25
27
29
23
12 Apr-11 May
1
2
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
Your transactions
Date
Description
Money Out
Money In
Balance
19.50
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance

FIG. 5

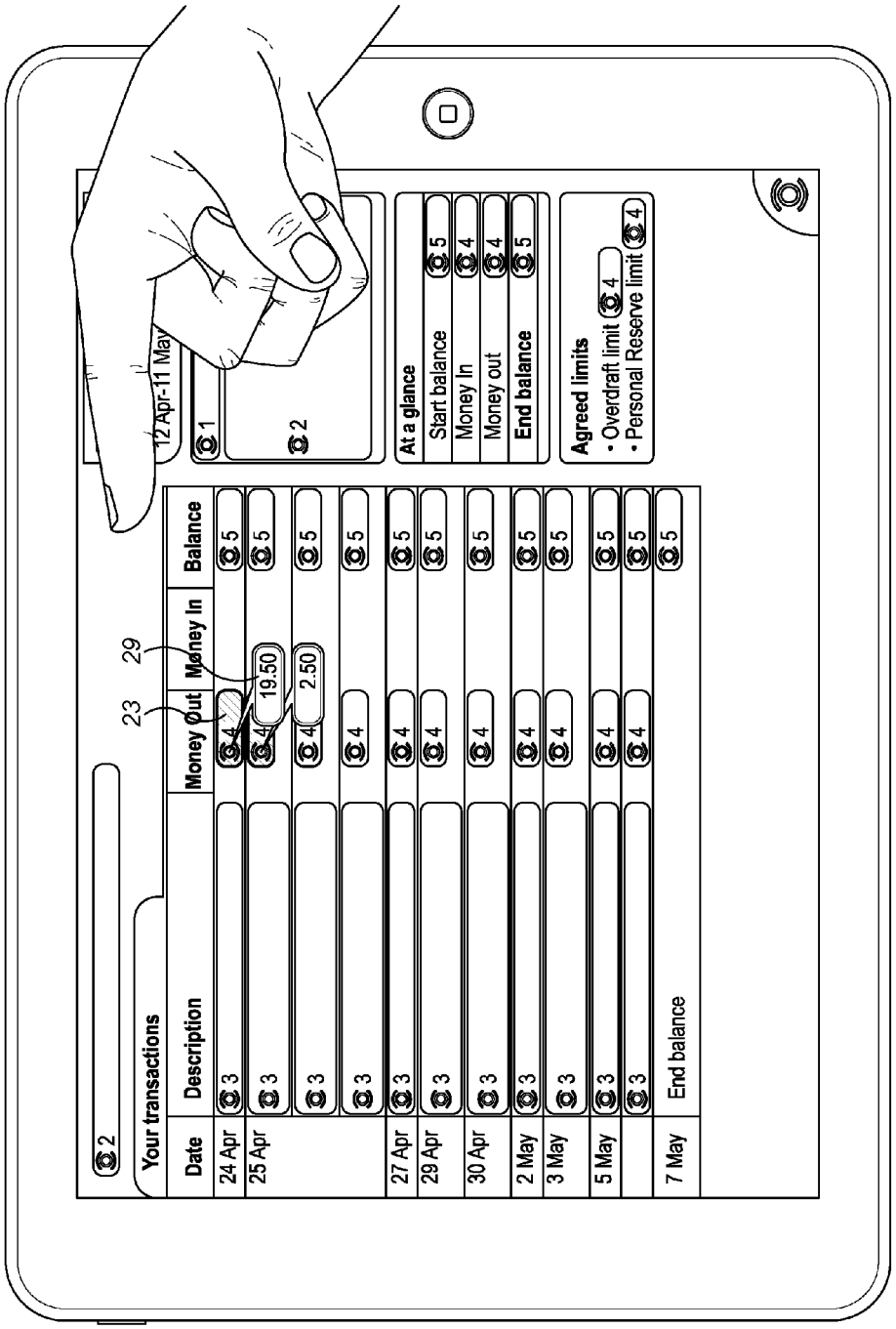

12 Apr-11 May
1
2
At a glance
Start balance 5
Money In 4
Money out 4
End balance 5
Agreed limits
• Overdraft limit 4
• Personal Reserve limit 4
2
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
25 Apr
19.50
2.50
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
23
29

FIG. 6

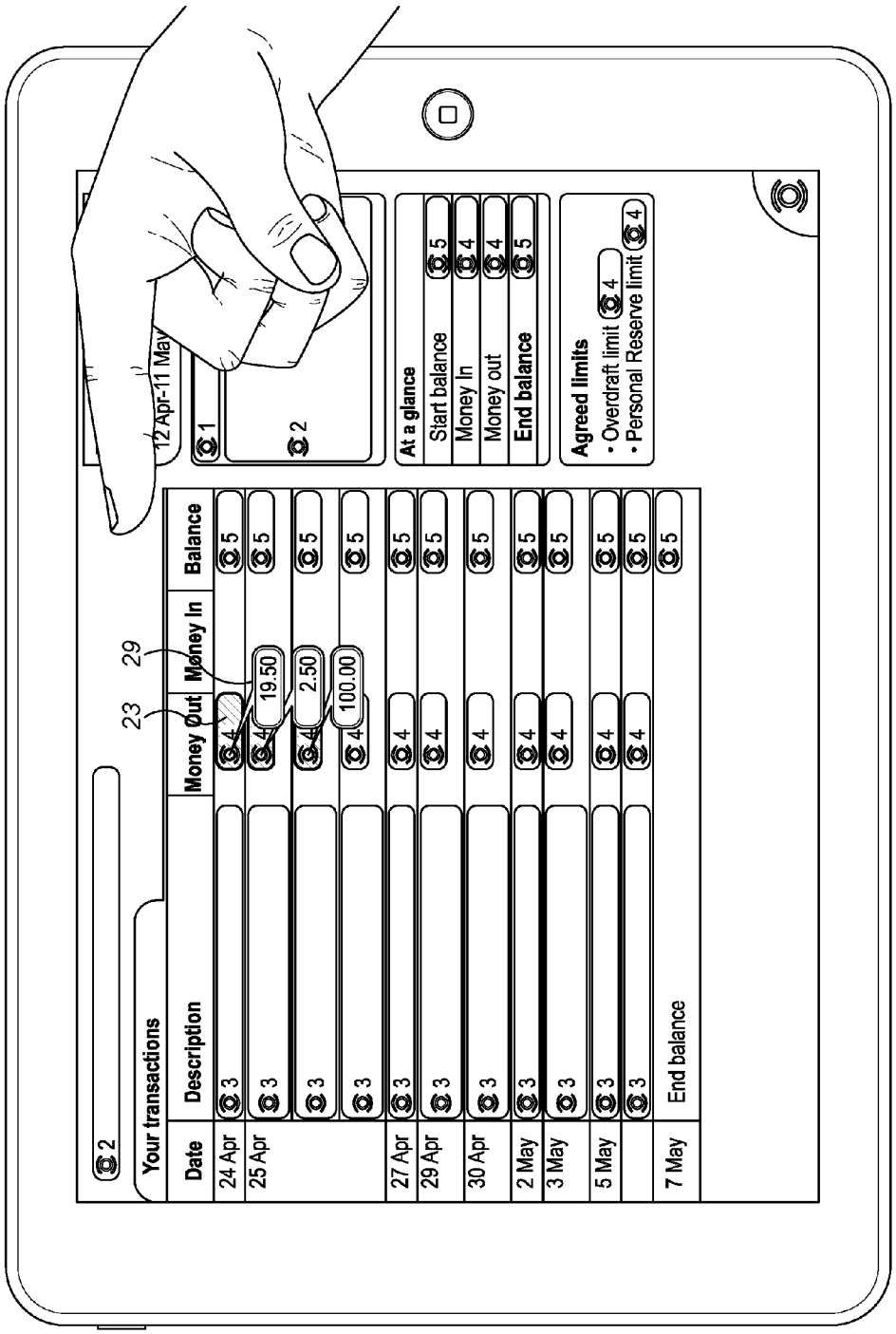

2
Your transactions
Date
Description
Money out
Money In
Balance
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
19.50
2.50
100.00
23
29
12 Apr-11 May
1
2
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit

FIG. 7

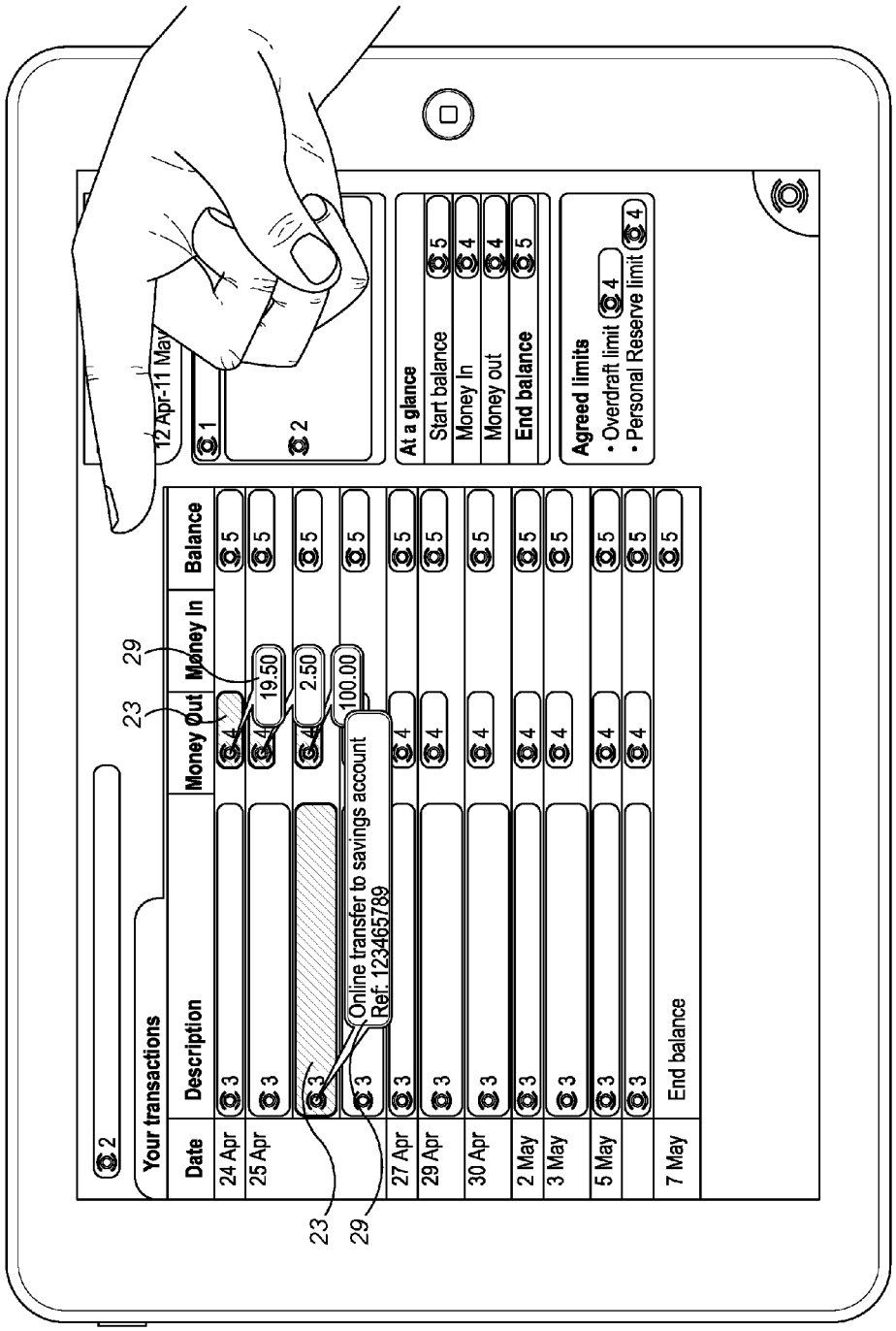

12 Apr-11 May
1
2
At a glance
Start balance 5
Money In 4
Money out 4
End balance 5
Agreed limits
• Overdraft limit 4
• Personal Reserve limit 4
2
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr 3 4 5
25 Apr 3 4 19.50 5
3 4 2.50 5
3 4 100.00 5
27 Apr 3 4 5
29 Apr 3 4 5
30 Apr 3 4 5
2 May 3 4 5
3 May 3 4 5
5 May 3 4 5
3 4 5
7 May End balance 5
Online transfer to savings account
Ref: 123465789
23
29
23
29

FIG. 8

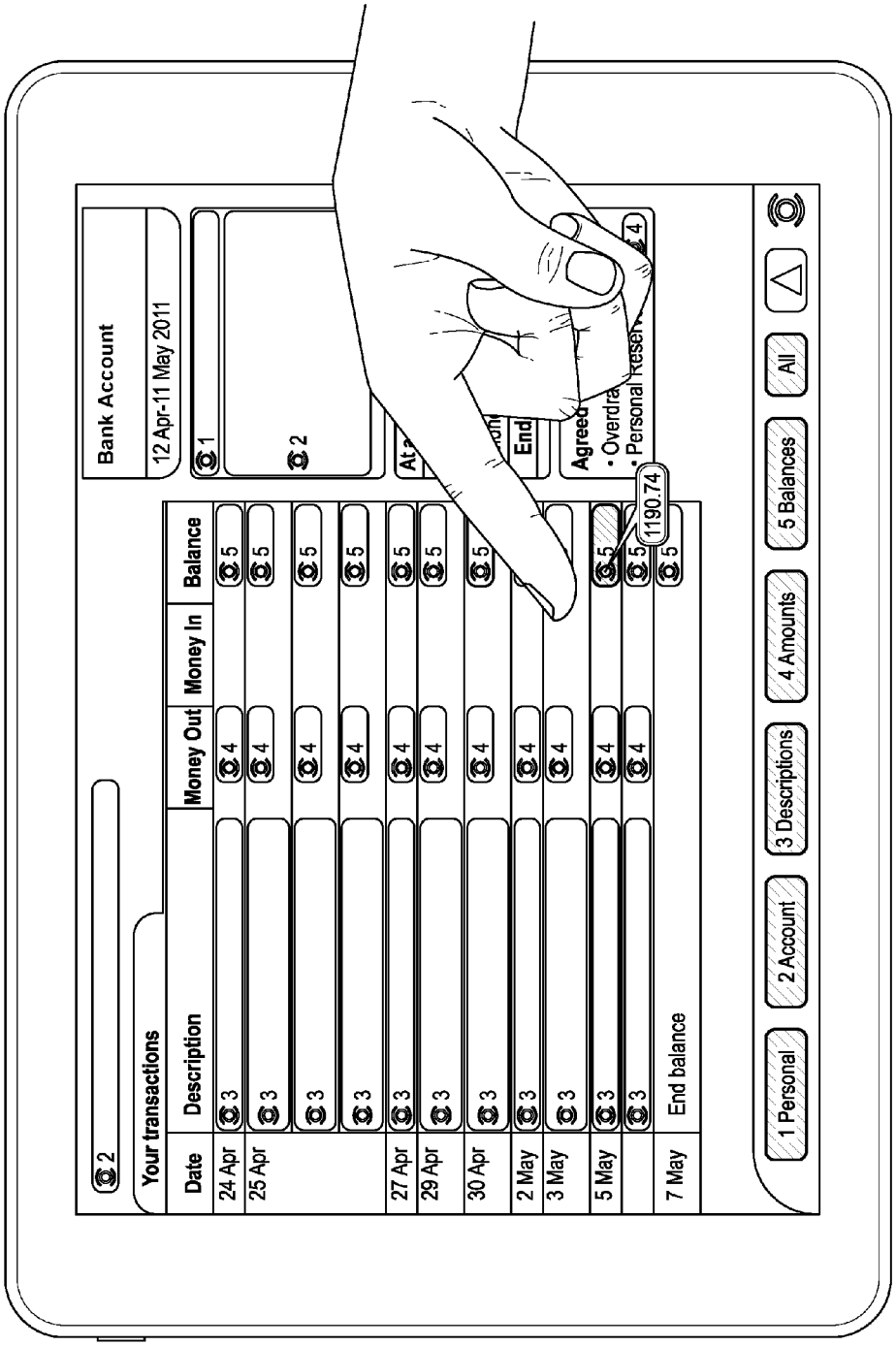

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
1190.74
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All

FIG. 9

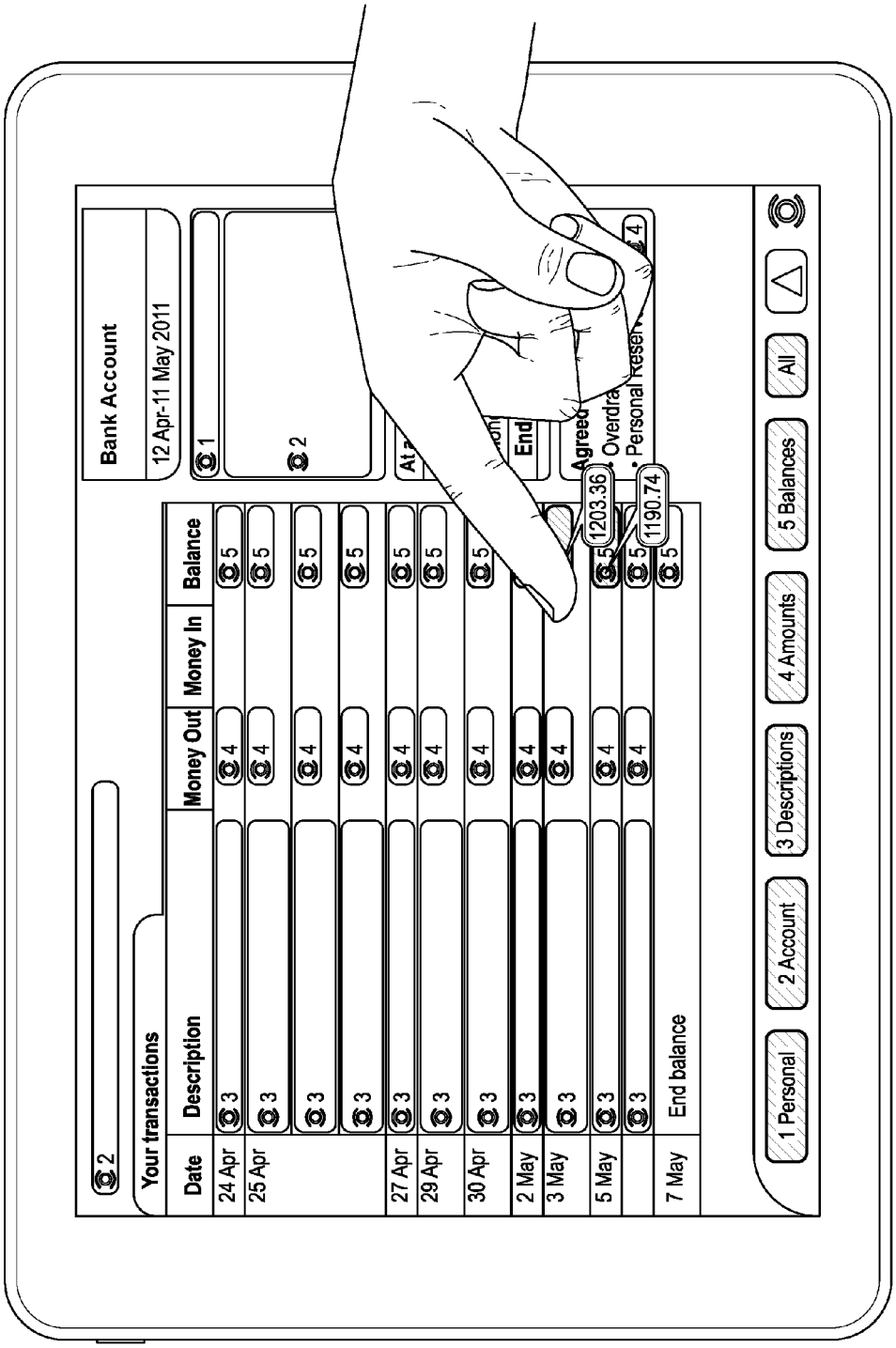

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
1203.36
1190.74
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All

FIG. 10

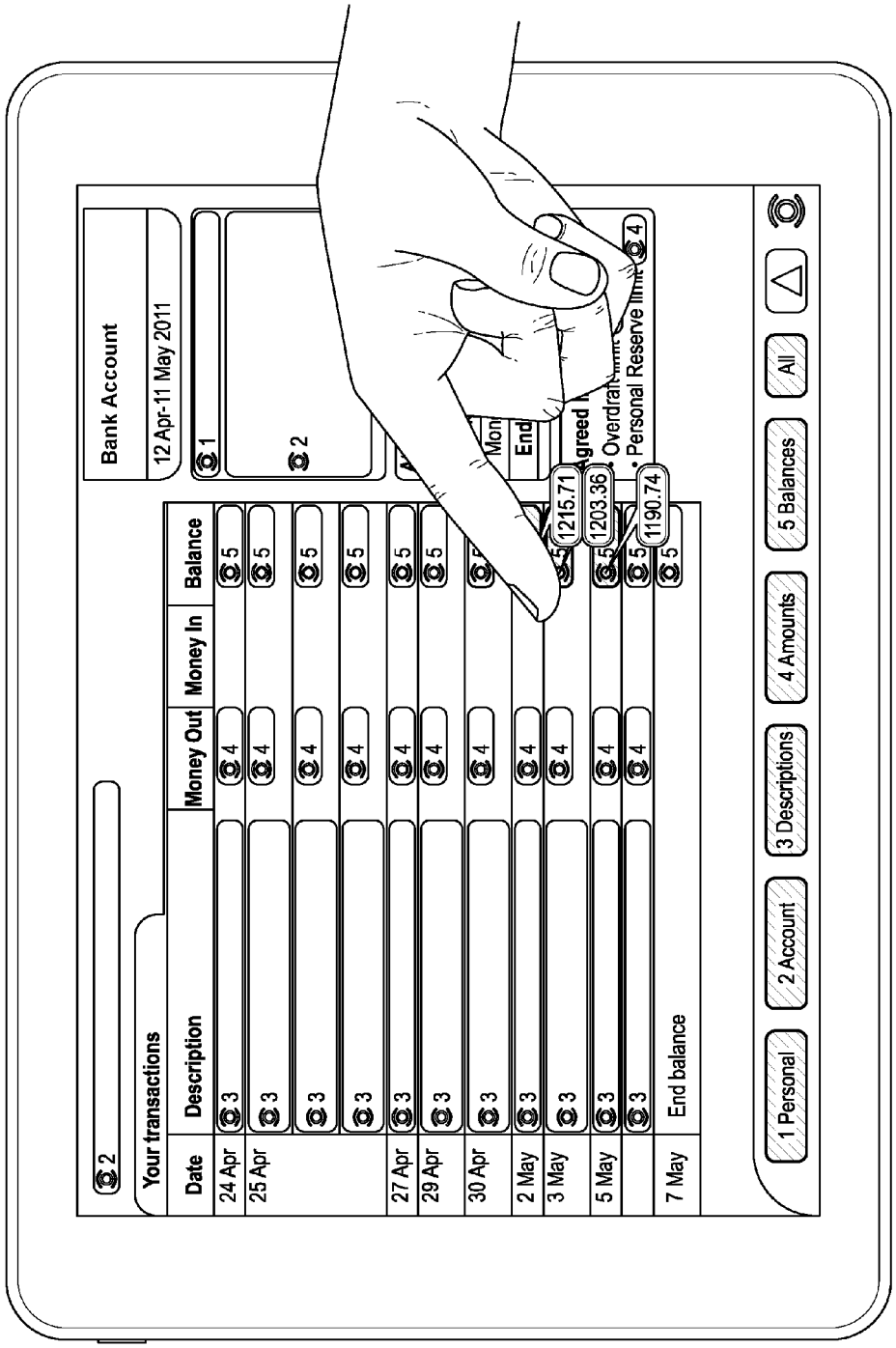

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
25 Apr
27 Apr
29 Apr
30 Apr
2 May
3 May
5 May
7 May
End balance
1215.71
1203.36
1190.74
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All

FIG. 11

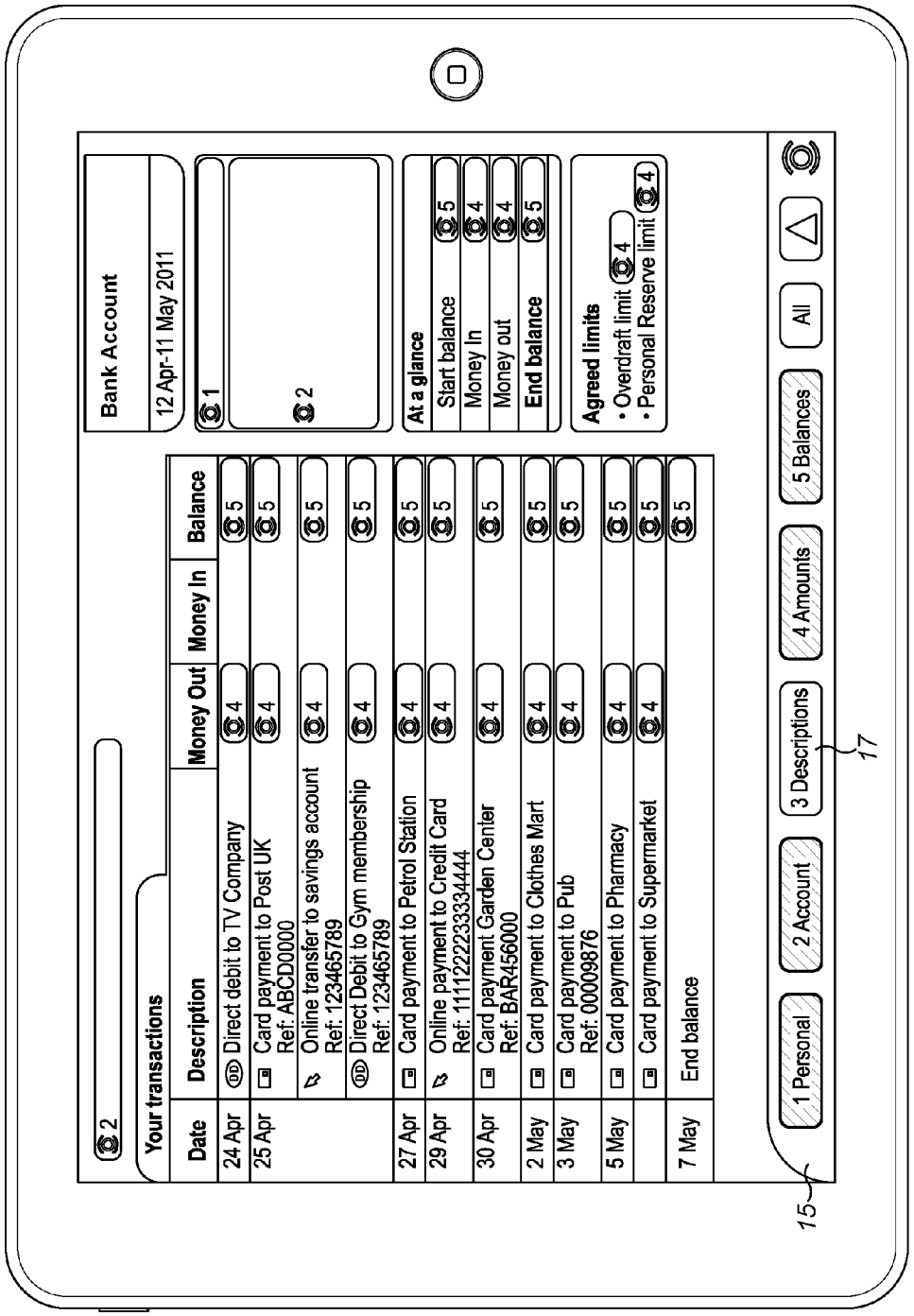

2
Your transactions
Bank Account
12 Apr-11 May 2011
1
2
At a glance
Start balance 5
Money In 4
Money out 4
End balance 5
Agreed limits
• Overdraft limit 4
• Personal Reserve limit 4
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK Ref: ABCD0000
Online transfer to savings account Ref: 123465789
Direct Debit to Gym membership Ref: 123465789
27 Apr
Card payment to Petrol Station
29 Apr
Online payment to Credit Card Ref: 111122223333444
30 Apr
Card payment Garden Center Ref: BAR456000
2 May
Card payment to Clothes Mart
3 May
Card payment to Pub Ref: 00009876
5 May
Card payment to Pharmacy
Card payment to Supermarket
7 May
End balance
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All
15
17

FIG. 12

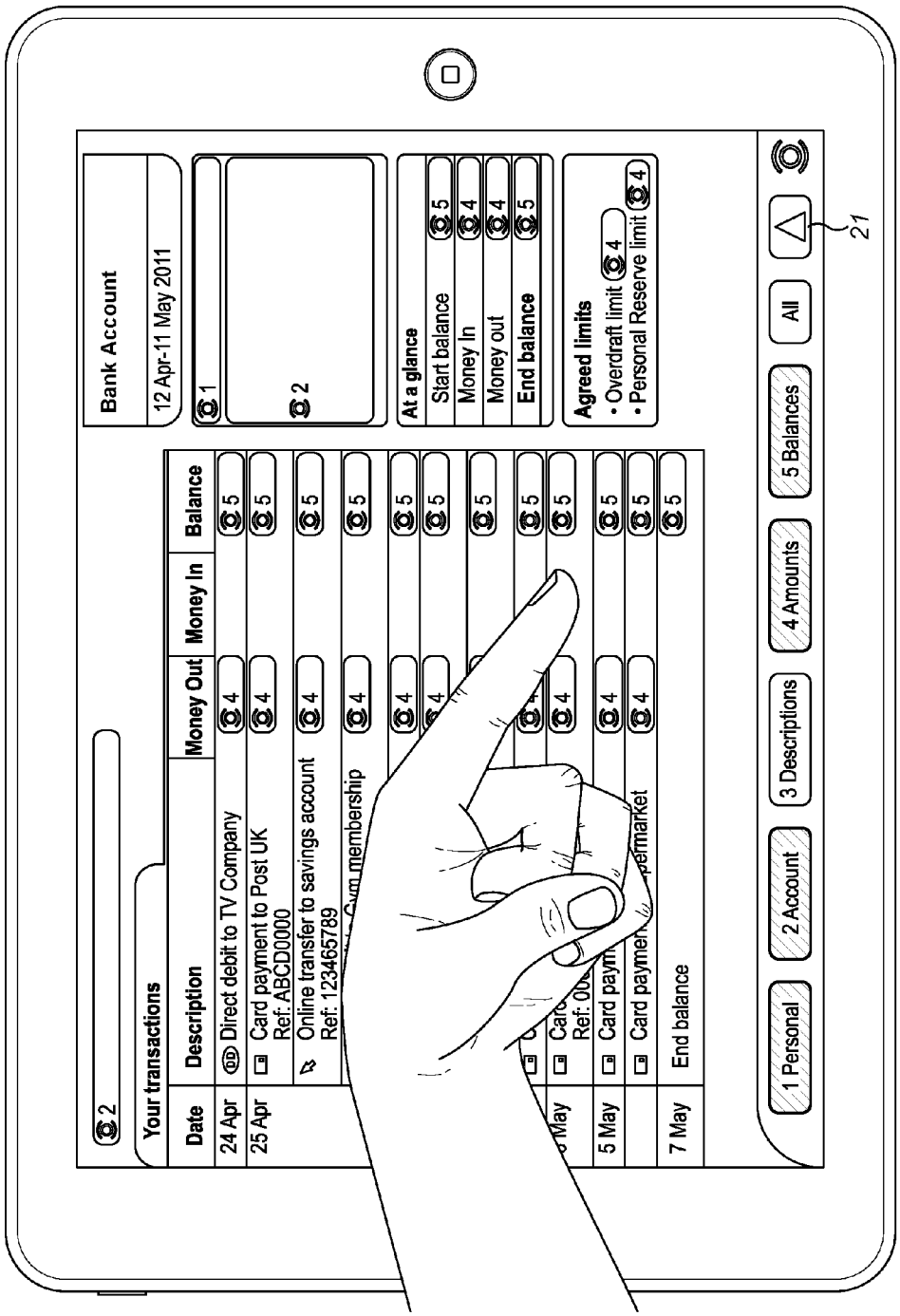

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK
Ref: ABCD0000
Online transfer to savings account
Ref: 123465789
7 May
End balance
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
All
21

FIG. 13

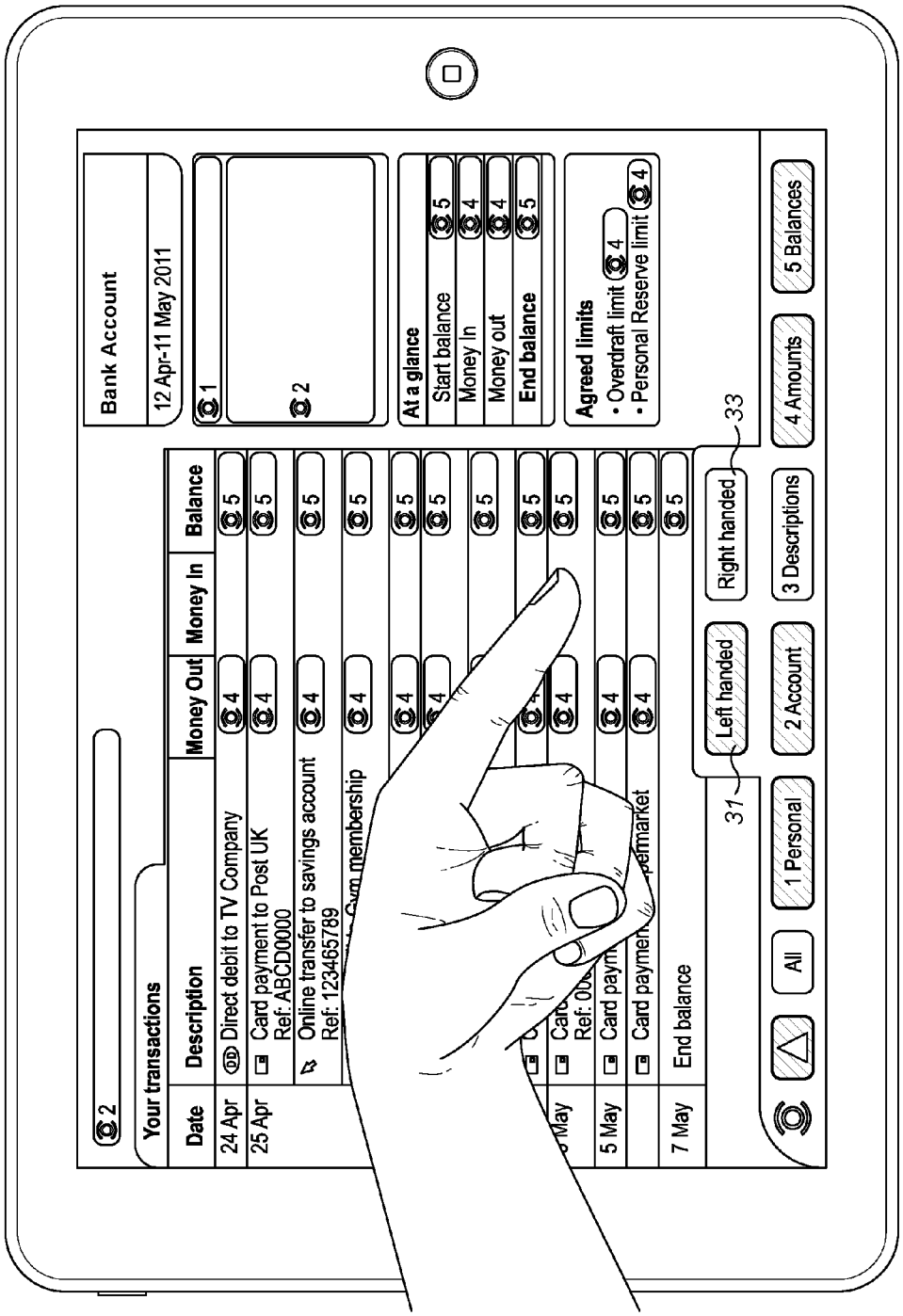

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK
Ref: ABCD0000
Online transfer to savings account
Ref: 123465789
7 May
End balance
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
All
1 Personal
Left handed
2 Account
Right handed
3 Descriptions
4 Amounts
5 Balances
31
33

FIG. 14

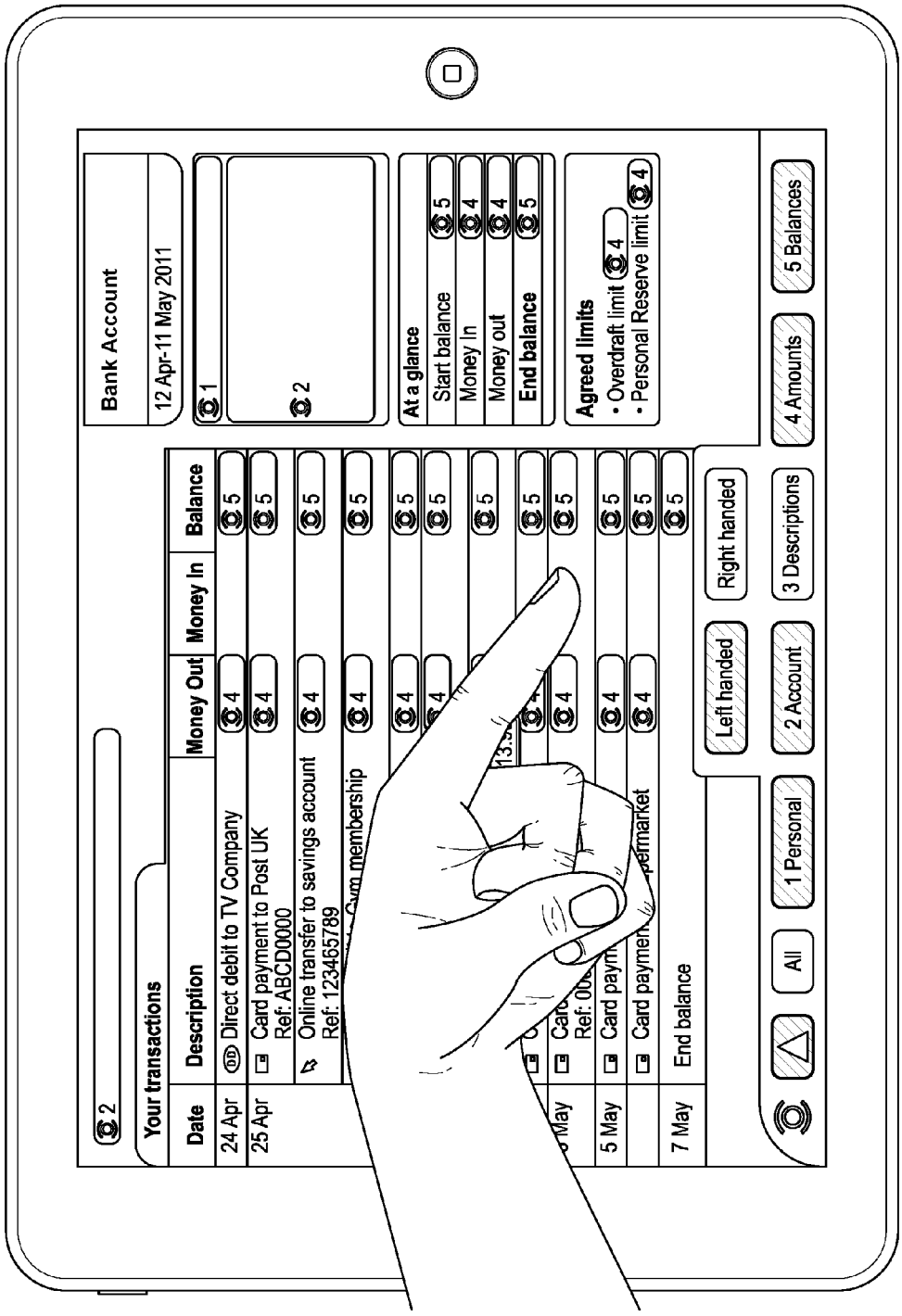

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK
Ref: ABCD0000
Online transfer to savings account
Ref: 123465789
7 May
End balance
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
All
1 Personal
2 Account
Left handed
Right handed
3 Descriptions
4 Amounts
5 Balances

FIG. 15

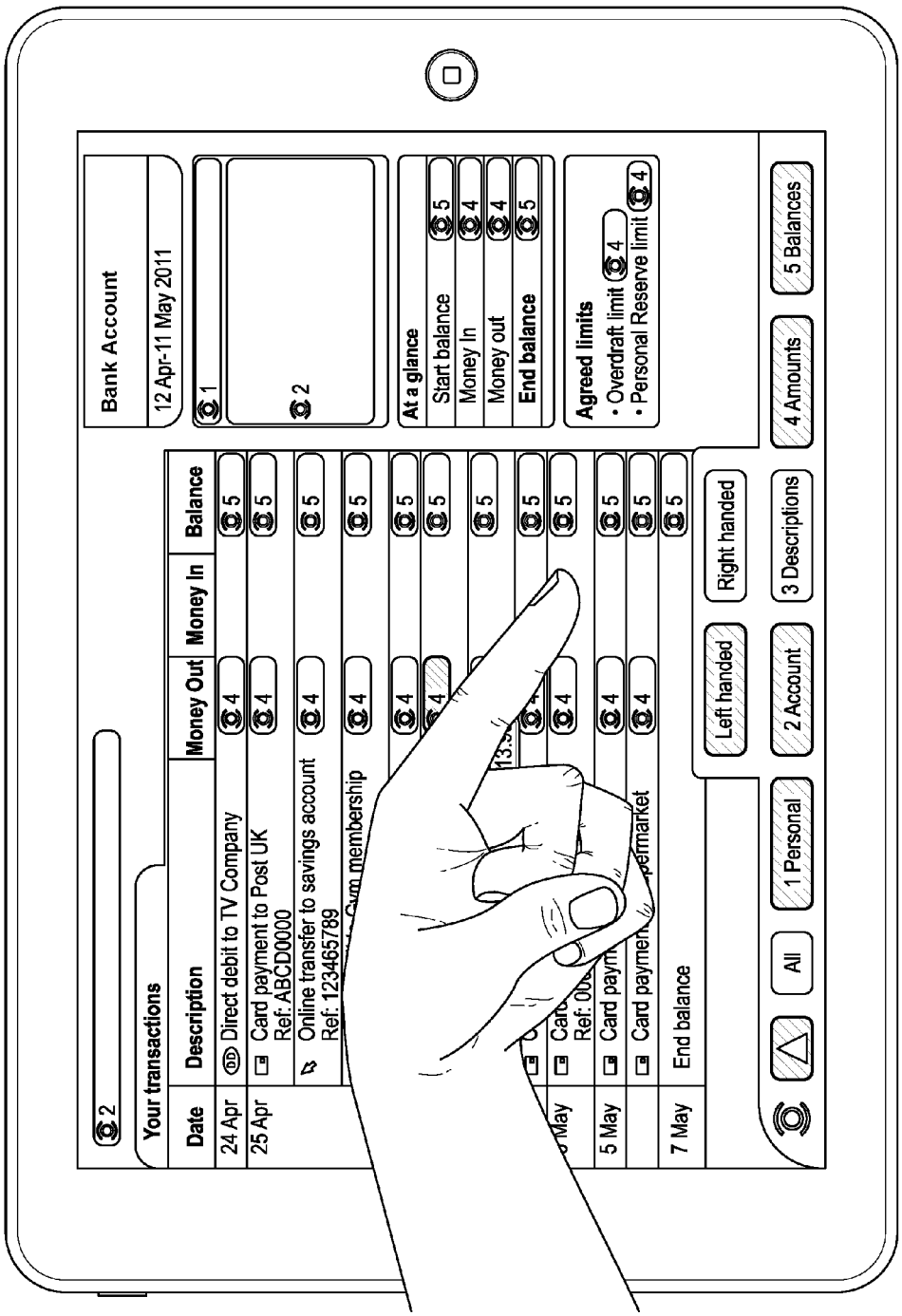

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK
Ref: ABCD0000
Online transfer to savings account
Ref: 123465789
7 May
End balance
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
All
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
Left handed
Right handed

FIG. 16

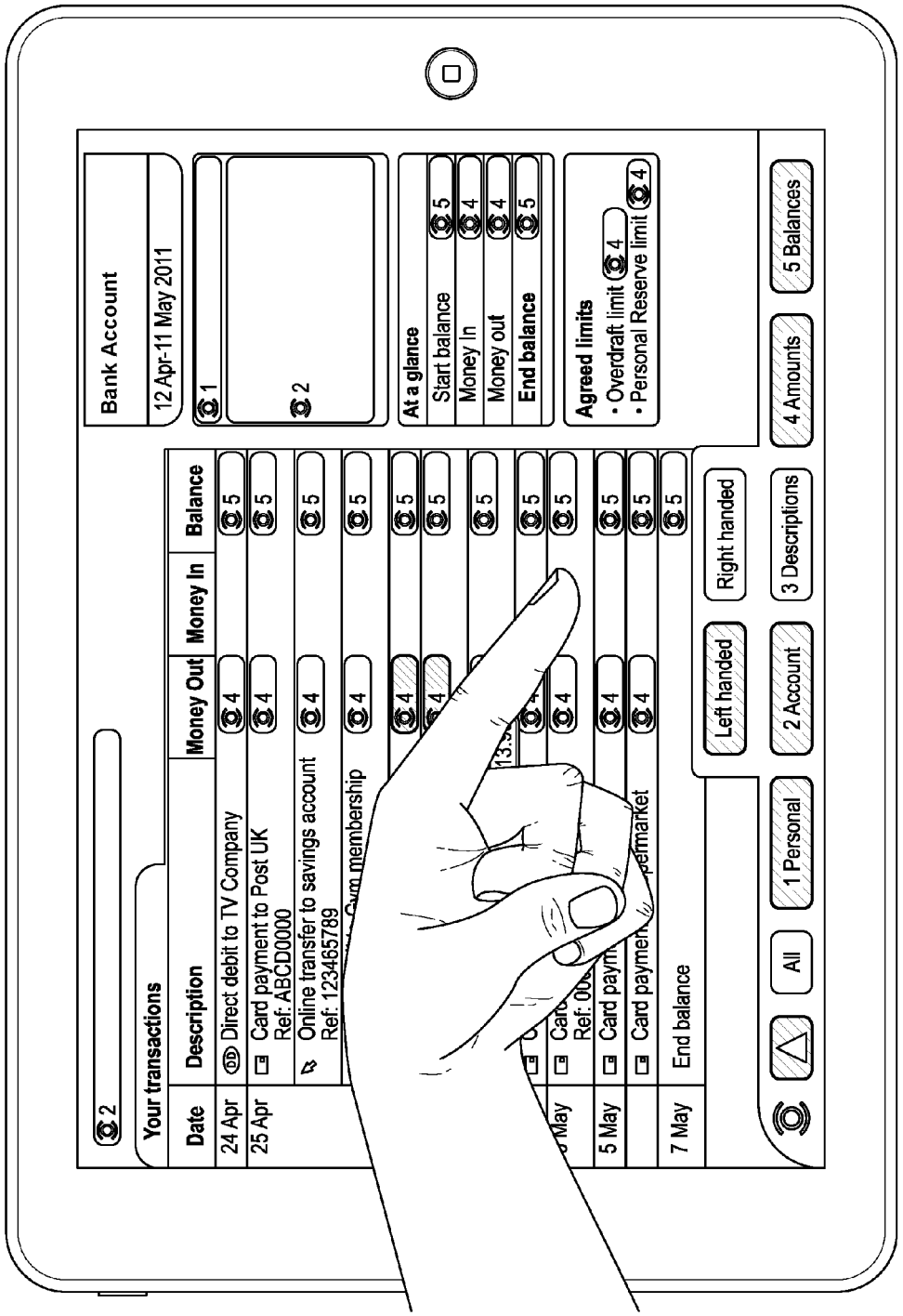

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money Out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK
Ref: ABCD0000
Online transfer to savings account
Ref: 123465789
5 May
Card payment
Card payment
7 May
End balance
At a glance
Start balance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
All
1 Personal
Left handed
Right handed
2 Account
3 Descriptions
4 Amounts
5 Balances

FIG. 17

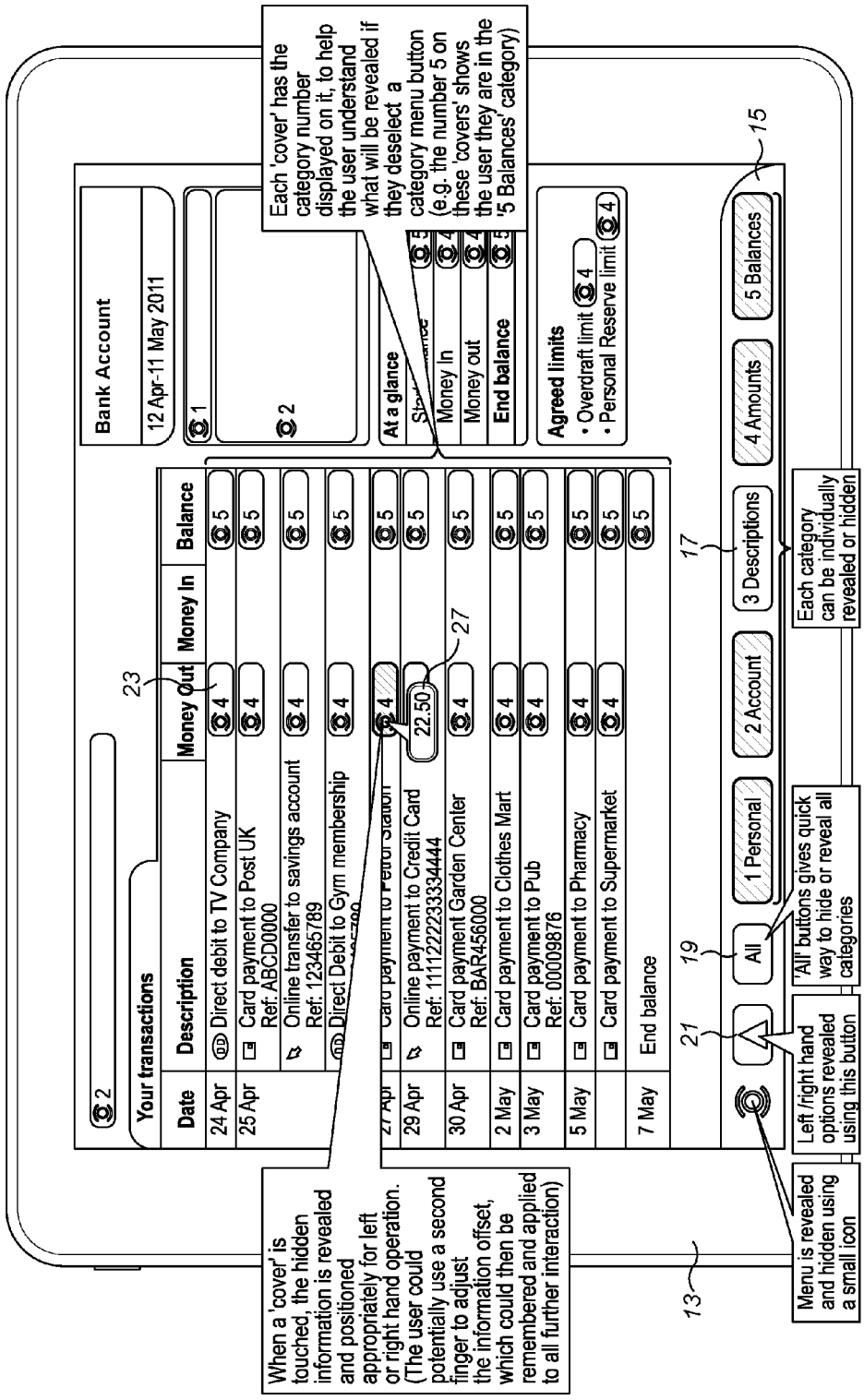

Bank Account
12 Apr-11 May 2011
Your transactions
Date
Description
Money out
Money In
Balance
24 Apr
Direct debit to TV Company
25 Apr
Card payment to Post UK Ref: ABCD0000
Online transfer to savings account Ref: 123465789
Direct Debit to Gym membership
27 Apr
Card payment to Petrol Station
29 Apr
Online payment to Credit Card Ref: 1111222233334444
22.50
30 Apr
Card payment Garden Center Ref: BAR456000
2 May
Card payment to Clothes Mart
3 May
Card payment to Pub Ref: 000009876
5 May
Card payment to Pharmacy
Card payment to Supermarket
7 May
End balance
At a glance
Money In
Money out
End balance
Agreed limits
• Overdraft limit
• Personal Reserve limit
All
1 Personal
2 Account
3 Descriptions
4 Amounts
5 Balances
Each 'cover' has the category number displayed on it, to help the user understand what will be revealed if they deselect a category menu button (e.g. the number 5 on these 'covers' shows the user they are in the '5 Balances' category)
When a 'cover' is touched, the hidden information is revealed and positioned appropriately for left or right hand operation. (The user could potentially use a second finger to adjust the information offset, which could then be remembered and applied to all further interaction)
Menu is revealed and hidden using a small icon
Left /right hand options revealed using this button
'All' buttons gives quick way to hide or reveal all categories
Each category can be individually revealed or hidden
13
15
17
19
21
23
27

FIG. 18

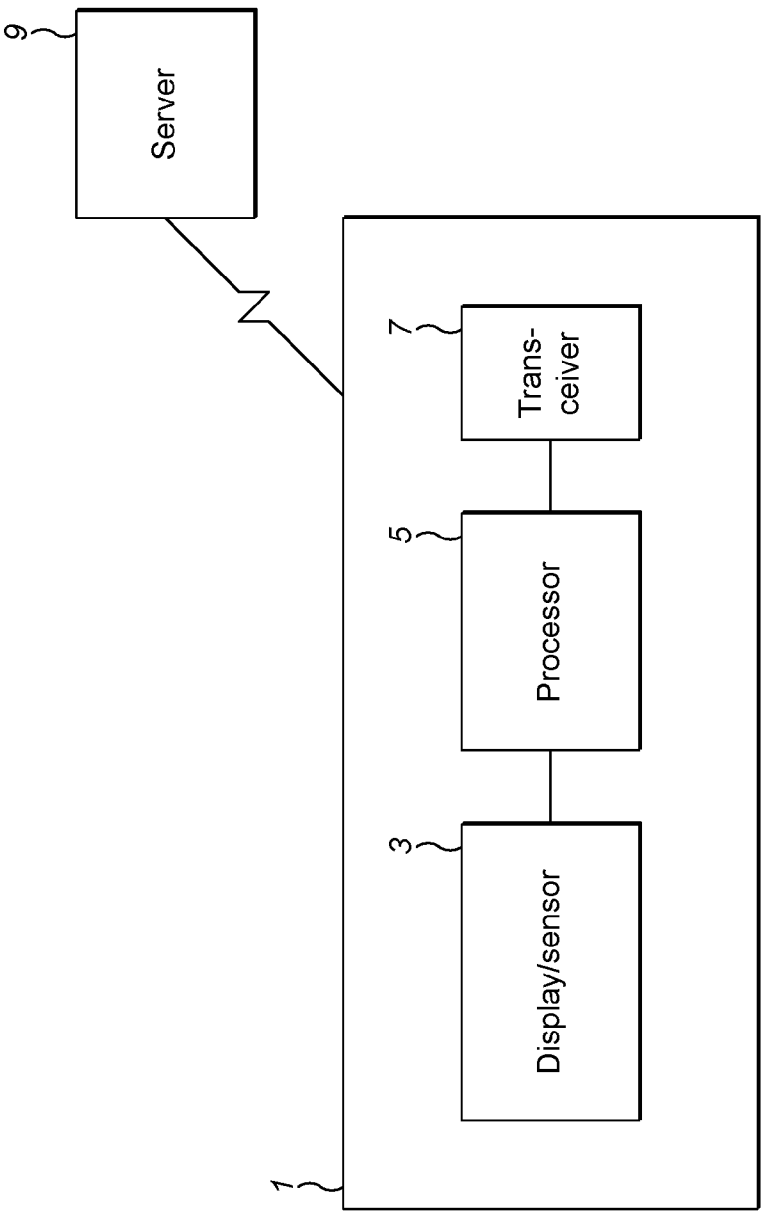


FIG. 19

DISPLAY DEVICE

The invention relates to a display device, a method of using and operating a display device, and the user interface of a display device or computing device. The invention especially relates to a mobile computing device such as a tablet. The invention is especially concerned with mobile banking, but is relevant to other applications involving sensitive information.

Mobile computing devices are well known. A problem with using a mobile computing device in a public location, such as on a train, is that information displayed on the device can be seen by others. This is especially a problem with devices with relatively large screens, such as tablets, and where sensitive information, such as bank account information, such as statements, is displayed.

In the field of online banking, it is known to display further information when the user hovers their mouse pointer over a transaction, see for example: http://www.rbs.co.uk/personal/your-statement.ashx# (see Payments made using your debit card in a shop), which states: 'More information—the last four digits of your card number, the date of the transaction and the name of the retailer—is shown in your full statement within the service. You can also see more information on the Account Summary page as a tool tip when you hover your mouse over the transaction.'

Aspects of the invention are set out in the accompanying claims.

The invention provides a method of operating or controlling a display device comprising displaying a plurality of covers corresponding to respective different data items, the method comprising displaying the corresponding data item or data items, in response to selection of the at least one respective cover, for example, by a user selecting a cover, for example, by touching a cover on the screen.

The invention also provides a method of operating or controlling a display device comprising displaying on a display device a plurality of covers representing data items in a plurality of different categories, for example, in a predetermined array, and/or a of plurality of data items in a plurality of different categories, preferably in a predetermined array, wherein data items, or data items in different categories, are selectively hidden or revealed (covered or uncovered) using the covers in response to selection, for example, by a user selecting a cover, for example, by touching a cover on the screen.

The invention also provides a corresponding display device, or apparatus, and computer program arranged to operate the method or such a display device or apparatus.

The invention relates to a method and apparatus for selectively revealing sensitive information on a tablet. The invention provides a interaction pattern for selectively revealing sensitive information on tablet devices, and more specifically to an interaction patterns that allows users to mask information and selectively reveal it, either at an individual data item level, or at a data category level.

Data items are displayed replaced (or concealed, masked or hidden) by covers, and the respective data items are displayed only on selection. The covers, either by markings, or labels, or location (such as location in a headed table or array) can indicate the type of data item covered, but do not include details of the data item. Each cover is preferably essentially the same size and shape as the respective covered data item, as displayed without the cover, or as displayed, for example, superimposed on or in relation to a cover. If a data item is selected and displayed, only the selected data item or items is or are displayed, and other data items remain covered. Thus, display is selective and partial. The other covers continue to be displayed.

Preferably, the display of data items defaults to "covered", and selected data items or categories of data items are displayed. Alternatively, data items can initially be displayed, and selected data items or categories or data items can be selected to be covered. The covered data items can then subsequently be selectively displayed.

When there are a plurality of data items to be displayed, these are displayed as a plurality of covers, and when a cover is selected and the corresponding data item is displayed, the remaining data items are not displayed, but remain covered. In other words, only the selected data item is displayed, and the remaining data items are not displayed, or are displayed in the form of or represented by their respective covers. Similarly, if a plurality of data items are selected for display, only the selected data items are displayed. The remaining data items are not revealed. The remaining data items remain displayed as covers. In other words, there is partial display of information, that is, display of only the selection information of data items. The selected information is revealed, and the remaining information remains concealed and covered.

As a result of the invention, the display of possibly sensitive information can be controlled, so that the user can see the information while concealing the information from others. The user can choose to display certain categories of information, for example, that is less sensitive, and/or to improve ease of use, for example, making it easier to browse.

By defaulting to displaying information in the form of covers, information is not displayed until desired by the user. Accordingly, information is not displayed to others. Information can be displayed on selection by the user, so display is controlled by the user. The user can choose partial display, thereby limiting the information that can be viewed, for example, by others, and also the size of information being viewed, thereby reducing the risk of information being viewed by others. By choosing how and where the information is displayed, the information can be shielded by the user, for example, using the hand that selects the information.

Embodiments of the invention will be described with reference to the accompanying drawings, of which:

FIGS. **1** to **18** show a tablet according to an embodiment of the invention, with different displays.

FIG. **19** is a block diagram of a device and network according to an embodiment of the invention.

FIG. **1** shows a tablet device **1** including a touch screen **3**, which is a display for displaying information and also a sensor for sensing contact at different locations across the screen. Contact may be, for example, by digits, usually one or more fingers, or by a contact device such as a stylus.

As represented in FIG. **19**, the display and sensor **3** are connected to a processor **5**, for processing instructions. The processor is connected to transceiver **7** for transmitting and receiving information. In the embodiment, the transceiver **7** transmits and receives information wirelessly, across a wi-fi or mobile phone network. In the embodiment, information is transmitted to and received from a remote server **9**, in a bank.

In FIG. **1**, the device displays an account statement. The displayed account statement includes displays of data items **11** in the form of details of transactions including date, description, amount and balance, and other information such as a summary of account details, and a summary of the account statement.

The display of the tablet device has a touch screen **3** that is relatively large. Thus, displayed information may be easily visible to others. The user may wish to keep sensitive information such as account information private and hidden from others.

FIG. **1** also shows a menu button **13** in the bottom right hand corner of the display.

FIG. **2** corresponds to FIG. **1**, but with the menu button selected, and a menu bar **15** displayed. The menu bar includes category buttons **17** for numbered categories, in particular: 1 Personal; 2 Account 3 Descriptions; 4 Amounts and 5 Balances, corresponding to categories of data items, an "All" button, and an options button **19**, indicated by an arrow, discussed in more detail below.

As shown in FIG. **2**, all the category buttons are "deselected", as indicated by a dark border.

FIG. **3** shows a display in which certain displayed data items in the form of account information are replaced (that is, masked, hidden or covered) by covers **23**. In particular, for each transaction, each of the description, money in or money out, and balance is covered by a respective cover. Account details and account summary also have respective covers.

The covers correspond in size and location to the respective hidden data items. The covers also include a label in the form of a number indicating the category of hidden data item, as described in more detail below.

Other information, such as headings and logos remained displayed uncovered. Thus, the display includes display includes displayed information and hidden information.

In FIG. **3**, all the categories of data items available to be covered are covered. In other words, the display in FIG. **3** corresponds to the selection of the "All" button **19**, or selection of all of the category buttons **17**. As shown in FIG. **3**, the "All" button **19** and each of the category buttons **17** are shown as selected, indicated by a light border.

The display of FIG. **4** corresponds to the display of FIG. **3** with the menu bar hidden and replaced by the menu button in the bottom right hand corner, achieved by selection of the menu button when the menu bar is displayed.

Referring to FIG. **5**, the user selects information to be displayed by contacting the screen in the relevant position, using a finger or stylus. In the present embodiment, a cover is selected by touching the cover on the screen. As shown in FIG. **5**, a cover is selected by a finger **25** of a right hand **27**.

As shown in FIG. **5**, when a cover **23** is selected, the corresponding data item is revealed and displayed, in a predetermined display format.

In more detail, sensors in the touch screen identify a contact location. The contact location is compared with the locations of the covers to identify the nearest cover in the display. The data item corresponding to the nearest cover is retrieved, and displayed at a display location, as described in more detail below.

In FIG. **5**, the selected cover **23** is highlighted, and the data item is displayed at the same time, below (in the plane of the screen in the orientation being viewed) the selected cover, displayed within a rectangular label **29** with a visible link to the selected cover.

Thus, the previously covered and hidden data item is uncovered and displayed.

In the present embodiment, the location of the display of the hidden data item is predetermined. In particular, it is set to display the hidden data item below the cover and to the right hand side, using a predetermined offset. For example, the centre of the label is offset from the centre of the respective cover by a predetermined value.

The offset is selected so that when a cover is selected and a hidden data item is displayed, the data item can be shielded by a user's hand **27**. Preferably, the offset is such that, when a finger **25** contacts a cover, the displayed data item is shielded by the hand of the finger contacting the cover. Thus, the displayed data item is shifted down and to the right, with respect to the cover, for right-handed operation, that is, displayed below the finger so the hand can be used as a shade. This is illustrated in FIGS. **8** to **10**, for one, two and three data items.

In FIG. **5**, only the cover **23** selected by contact of the cover has the corresponding data item displayed. The other, unselected, covers remain displayed and the respective data items remain hidden and are not displayed. Thus, the user has control over what is and isn't displayed.

As long as the cover **23** is selected, the data item is displayed. After the selection, that is, contact, is removed, the data item continues to be displayed for a predetermined period of time. Alternatively, the data item can be hidden again by selecting again the cover when the data item is displayed.

FIG. **6** shows two covers **23** selected and the corresponding data items displayed in respective labels **25**, and in FIG. **7**, three covers **23** are selected and the corresponding data items displayed.

In FIGS. **5** to **7**, the same type of data item (amount; money out) are selected and displayed. These belong to the same category: 4 Amounts. The content (value) of the data items are different.

In FIG. **8**, a further cover **23** is selected, which is a different type of data item (description), belongs to a different category: 3 Descriptions. The cover is highlighted and the data item displayed.

As shown in FIGS. **5** to **8**, the covers **23** are highlighted and the data items displayed at the same time. In other words, the hidden information continues to be displayed for a certain predetermined period after selection. The predetermined period of time may be zero, that is, the hidden information is displayed only as long as there is contact, or greater than zero, which can permit multiple data items to be displayed at the same time. Other options are possible, such as displaying multiple items for the same period of time after the last item is selected. After the predetermined period has elapsed, the data items are no longer displayed and only the cover is displayed. Alternatively, the hidden information can be displayed only as long as the respective cover is selected, that is, as long as the cover is contacted by a finger or stylus or the like.

The offset is the same for all data items, but different offsets can be used.

Covers that have not been selected continue to be displayed, hiding the unselected information from view.

One or more data items can be selected by contact and displayed at the same time, as shown in FIGS. **9** to **11**. The selecting hand can be used to shield the revealed data.

FIGS. **9** to **11** also show the menu bar **15** displayed. Using the menu bar **15**, all data items in a given category can be displayed at the same time by selecting (or deselecting) a category. As shown in FIG. **12**, category **3** Descriptions is selected, by contacting the button **17** in the menu bar **15**, and all the covers of the description items are removed and the description items displayed. The covers for the remaining data items remain displayed, and those data items can be selectively displayed, for example, as described above.

As mentioned above, the display is arranged for a right-handed person (that is, the hidden data items are displayed to be screened by a right hand selecting a cover). The device

and the display can be adapted for use by a left-handed person, using an option in the menu bar, as shown in FIGS. **13** and **14**. FIG. **13** corresponds to FIG. **12**, and the display is arranged for a right-handed person. The left-handed person selects the options button **21**, indicated by an arrow. This displays left handed and right handed option buttons **31**, **33**. On selection of the left handed option button **31**, the buttons in the menu bar are reordered (FIG. **14**) and information is displayed differently so as to be shielded by the left hand (FIG. **15**). The menu button, options button and "All" button are displayed in the bottom left hand cover, and the category buttons to the right of those buttons, rather than to the left, as in the right-handed option. Also, a different offset is used. More specifically, the offset displays the information to the left hand side of the cover. Typically, the offset is the same as for the right hand option, apart from reversing the direction of the horizontal offset. FIG. **16** shows selection and display of multiple items, similar to FIGS. **6** to **8**, **10** and **11** described above. Unless otherwise described, other operations in the left-handed option are as described above for the right-handed option.

Similarly, a left or right hand option can be selected depending on whether there is a person to the left or right hand side to hide information from.

Although preferably the hidden data items are displayed to be shielded by the handed selecting the respective cover, other display options are possible. For example, the data item can be displayed when the respective cover is selected by a finger of one hand, and shielded by the other hand.

In the embodiment, selected information can be viewed by the user, but shielded from others. The remaining information is covered, until selected, so that information is kept private. Accordingly viewing of all the information can be controlled to be seen only by the user.

FIG. **18** illustrates elements of the display.

The menu bar **15** is revealed and hidden using a small menu icon or button **13**. An options button **21** hides or reveals options including options for selecting left or right hand operation. An "All" button **19** hides or reveals the covers of all of the categories. Each category has a button **17** to reveal or hide all data items in that category.

In the menu bar **15**, the borders around each button indicate if the button is "selected" or "deselected". In the embodiment, a white border (shown as light in the Figures) indicates "selected" and a blue border (shown as dark in the Figures) indicates "deselected".

In the case of the category buttons, a white border means "cover" is selected, that is, all data items in that category are covered, subject to individual selection by the user. A blue border means "cover" is deselected, that is, all data items in that category are uncovered and displayed.

In the case of the options button, a blue border means the options are not presented for selection, and a white border corresponds to selection of the options button and display of the available options. In the case of the "All" button, a white border means that all covers are displayed. A blue border means either that data items of all categories are displayed, by deselecting the "All" button, or that data items of at least one category are displayed, by selecting one of the category buttons.

Each cover **23** has a category number displayed on the cover, to help the user understand what will be revealed if a category button is deselected, or if the individual cover is selected.

When a cover **23** is touched, the hidden information is revealed and positioned appropriately for left or right hand operation.

In the embodiment, the hidden information is displayed in a label **29**, and the cover and label, or data item as displayed, are essentially the same shape and size. Other display options are possible. Preferably the data item is displayed offset from the cover, but this is not essential. The data item can be displayed partially or fully superimposed on the cover, or otherwise linked or related to the cover.

In the embodiment, account information is initially transmitted and displayed as shown in FIG. **1**, and all the data items are covered by selection of the "All" button, as shown in FIG. **3**. Alternatively, account information can initially be displayed with all data items covered, as shown in FIG. **3**.

The terms "selected" and "deselected" can be used interchangeably.

Data is transmitted and displayed using known techniques for mobile banking, such as using a website, or by using programs and data stored on the device, or a combination. Categories of data items, for including in the covers and for control of display of categories of items, may be identified, for example, from location in an array, or by metadata associated with the data items. As an example, the server may only send the selected information, that is, data item, to the device when the respective cover is selected, thus increasing security, or all data items may be transmitted to the device and only displayed when the respective cover is selected.

In the embodiment, the location, including the offset, of the information displayed when a cover is selected is predetermined. In an alternative embodiment, the location can be adjusted using a second finger of the user. In this way, the location of the displayed information can be set to be hidden by the user's hand according to the user. This offset can be saved and used and applied to future interactions.

In the embodiment, multiple items can be displayed at the same time by displaying items for a predetermined period of time after selection, or by selecting a category or categories. Other ways of displaying multiple items are possible, such as selecting multiple items by sliding a finger over the screen.

The invention can be implemented using suitable software and/or hardware form.

The invention is applicable to any software application that displays sensitive information, that a user may wish to conceal from others, on a computing device, especially a mobile and/or large screen device such as a tablet.

Although the embodiment involves a mobile computing device, the invention is not limited to mobile computing devices. The invention is also applicable to fixed devices, for example, where information is to be shielded from others nearby, such as computers in public locations such as internet cafes. Similarly, the embodiment involves a touch screen device, but the invention is not so limited. By defaulting to covering sensitive information, and selectively controlling what information is displayed, the user has more control, and limits what is displayed, which is beneficial in public locations.

The invention claimed is:

1. A method of operating a display device comprising displaying on a display device a plurality of covers representing data items in a plurality of different categories, wherein all data items in a category are selectively revealed using the covers in response to receiving user input selection of said category, wherein said data items and information identifying said categories is received by the display device from a remote location, and wherein only the data items in

the selected category are transmitted from said remote location in response to receiving user input selection of said category.

2. The method of claim **1** wherein the display device is a touch screen device, and a category is selected by contact on the screen.

3. The method of claim **2** wherein the plurality of data items are displayed at the same time as the category is selected.

4. The method of claim **1** wherein a revealed data item is displayed shifted from the respective cover by an offset.

5. The method of claim **4** wherein the offset is predetermined.

6. The method of claim **4** wherein the offset size and/or direction is adjustable.

7. The method of claim **4** wherein an option is provided to select offset to the left or right hand side.

8. The method of claim **4** wherein the offset size and/or distribution is adjustable by screen contact.

9. The method of claim **1** comprising determining a layout for display of data items, displaying covers in said layout corresponding to said data items, and displaying the data item or items when a respective cover is selected.

10. The method of claim **1** comprising displaying a plurality of input elements associated with a respective plurality of user-selectable categories, sensing a selection location of a selecting device by sensing contact on the screen, determining the nearest input element in the display to the selection location, determining the corresponding data items in the user-selected category, determining a plurality of display locations, and displaying the data items on a display at the determined display locations.

11. The method of claim **1** wherein said data items relate to financial information.

12. The method of claim **1** wherein the display device is a mobile device.

13. Apparatus comprising means for executing the method of claim **1**.

14. The method of claim **11**, wherein said data items relate to bank account statement information.

15. A computer program comprising computer-executable steps to execute the method of claim **1**.

16. A display device comprising one or more hardware processors configured to:

display a plurality of covers representing data items in a plurality of different categories;

selectively displaying all covered data items in a category in response to user input selection of said category; and

receive said data items and information identifying said categories from a remote location, wherein only the data items in a selected category are transmitted from said remote location in response to receiving user input selection of said category.

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